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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/334,325	06/16/1999	STEWART A. CEDERHOLM-WILLIAMS	CV0276A	5209

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EXAMINER
CHEN, SHIN LIN

ART UNIT	PAPER NUMBER
1632	

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/334,325	CEDERHOLM-WILLIAMS, STEWART A.	
	Examiner	Art Unit	
	Shin-Lin Chen	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 13-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment filed 11-30-05 has been entered. Claim 1 has been amended.

Claims 1 and 13-16 are pending and under consideration.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 and 13-16 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention and is repeated for the reasons set forth in the preceding Official action mailed 7-27-05. Applicant's arguments filed 11-30-05 have been fully considered but they are not persuasive.

Applicant argues that the 35 U.S.C. 112 first rejection is simply a rejection under 35 U.S.C. 101 in the guise of a rejection under 35 U.S.C. 112. Applicant further argues that it is not required by patent law to understand the theory of operation of the invention, to increase or enhance cell transformation efficiency, or to show every possible way to administer his invention (amendment, p. 3-4). This is not found persuasive because of the reasons set forth in the preceding Official action mailed 7-27-05. Applicant's arguments are misplaced because no such requirement was set forth in the office action, rather the office action set forth the rationale as to why the claimed invention was no enabled. The present rejection is 35 U.S.C. 112 first

paragraph enablement rejection but NOT a 35 U.S.C. 101 rejection. Examiner is confused how this enablement rejection is a 35 U.S.C. 101 rejection under the guise of a rejection under 35 U.S.C. 112. The claims are directed to a method of transforming a cell *in vitro* and *in vivo* via various administration routes, and encompass applying a nucleic acid to a cell first and then applying a pliable, adhesive fibrin gel to said cell so as to transform the cell *in vivo* at any location of any subject including human beings, mammals, fishes, birds, insects, fungus, plants etc., via various administration routes. The specification must provide sufficient enabling disclosure to support the enablement of the claimed invention but fails to do so. The specification fails to provide adequate guidance and evidence for transforming a cell *in vitro* or *in vivo* by applying a nucleic acid, such as a vector or a virus carrying the nucleic acid, to the cell first and then applying a pliable, adhesive fibrin gel to said cell so as to transform the cell *in vitro* or *in vivo* at any location of any subject via various administration routes.

The specification teaches compositions of fibrin sealants that incorporate recombinant vectors for delivery to a tissue or cell, and "[B]y use of such compositions, the vectors can be maintained at a locally at high concentration in the solid gel produced by the sealant, thereby increasing the efficiency of transfection or transformation of cells (see specification, p. 2, lines 9-13). The orderly method steps of (1) applying a nucleic acid to the cell and then (2) adhering a pliable, adhesive fibrin gel to the cell so as to entrap a transformation effective amount of nucleic acid in the fibrin gel adhered to the cell as instantly claimed, must provide such a high concentration of the vector in order to increase the efficiency of the transformation of the cells *in vitro* or *in vivo* in the claimed invention. Thus, increasing the efficiency of transfection or transformation of cells appears to be the purpose of using the compositions of fibrin sealants that

incorporate recombinant vectors for delivery to a tissue or cell. Even without increasing the efficiency of transfection or transformation of cells, the specification also fails to provide adequate guidance and evidence for how to transform a cell in vitro or in vivo via various administration routes by using the claimed method. The art of record only teaches pre-mixing fibrin with nucleic acid resulting in the nucleic acid being trapped in the fibrin gel for the method to work. The specification as filed also teaches the same (see p. 2, lines 9-13, p. 17, lines 8-17, lines 27-28). Therefore, neither the art nor the specification teaches where the nucleic acid is first applied to the cells followed by application of fibrin so as to transform cells with increased transformation efficiency. There is no evidence of record that shows increased or enhanced efficiency of cell transformation by the claimed method either in vitro or in vivo via various administration routes. When the nucleic acid is first applied to the cells followed by application of fibrin, the specification fails to provide any specific guidance as to how one skilled artisan would have first applied nucleic acid to the cells and subsequently applied fibrin in vitro or in vivo to the same cells so as to trap effective amount of nucleic acid to transform the cells with said nucleic acid. The claims encompass transforming cells in vivo via various administration routes, such as intravenous administration, intraperitoneal administration, oral administration, subcutaneous administration, and intramuscular administration etc. The specification fails to provide adequate guidance and evidence for how to apply nucleic acid to the cell first and then administer a pliable, adhesive fibrin gel to the cells at various locations of a subject via various administration routes such that the cells at the target site of the subject would have increased or enhanced transformation efficiency as compared to other method, such as the method known in the art by mixing the nucleic acid solution and the fibrin monomer together before administration

to the cells. The specification fails to demonstrate how intravenous administration, oral administration, intraperitoneal administration or subcutaneous administration could deliver the pliable, adhesive fibrin gel to the cells of kidney, pancreas, heart, stomach, colon, liver, intestine, or brain and the pliable, adhesive fibrin gel would not polymerize before reaching the target cells in vivo. The lack of teachings and evidence of record for such delivery of the pliable, adhesive fibrin gel in vivo would require one skilled in the art at the time of the invention undue experimentation to practice over the full scope of the invention claimed.

Absent the guidance of the claimed method, the lack of knowledge of the mechanism of cell transformation by the claimed method and the lack of working example and evidence of record regarding the claimed method, one skilled in the art would not know how to transform cells or to increase or enhance the efficiency of cell transformation *in vitro* or *in vivo* by using the claimed method and would require undue experimentation to practice over the full scope of the invention claimed. Thus, claims 1 and 13-16 remain rejected under 35 U.S.C. 112 first paragraph.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Applicant's amendment filed 11-30-05 necessitates this new ground of rejection. The omitted steps are: whether the cell is transformed or not. The method steps fail

to refer back to the preamble of the claimed method, i.e. to transform a cell. Claims 13-16 depend from claim 1 but fail to clarify the indefiniteness.

Conclusion

No claim is allowed.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shin-Lin Chen whose telephone number is (571) 272-0726. The examiner can normally be reached on Monday to Friday from 9:30 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for this group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Shin-Lin Chen, Ph.D.

SHIN-LIN CHEN
PRIMARY EXAMINER